

PATENT CLAIMS

1. A thermostatically regulated roasting/grilling device with a roasting/grilling plate (7,17,27,37) incorporated in the roasting/grilling device, characterised in that it contains at least one measurement coil forming an element of a high-frequency oscillation circuit, and that with the at least one measurement coil the temperature of the roasting/grilling plate (7,17,27,37) may be monitored in a contactless manner by way of electromagnetic radiation and the temperature may be used for the thermostatic regulation of the roasting/grilling power.
2. A roasting/grilling device according to claim 1, characterised in that the roasting/grilling plate (7,17,27,37) contains a ferromagnetic material and that at least one induction coil (30, 50) is present for heating the roasting/grilling plate.
3. A roasting/grilling device according to claim 2, characterised in that the induction coil (30, 50) is designed with a rectangular shape and the size of this induction coil (30, 50) corresponds essentially to the extension of the roasting/grilling plate (7,17,27,37).
4. A roasting/grilling device according to claim 3, characterised in that the distances d1 between two winding sections on longitudinal sides (50a) of the rectangular coil and distances d2 between two winding sections on width sides (50b) of the rectangular coil are different and vary as a function of the winding diameter.
5. A roasting/grilling device according to one of the claims 2 to 4, characterised in that the windings of the induction coil (30, 50) are arranged in a manner such that an essentially homogeneous magnetic field may be produced essentially on the complete extension of the roasting/grilling plate (7,17,27,37).
6. A roasting/grilling device according to one of the claims 2 to 5, characterised in that at least one measurement coil is arranged between the roasting/grilling plate (7,17,27,37) and the induction coil (30, 50).
7. A roasting/grilling device according to claim 6, characterised in that the at least one measurement coil is arranged in a manner such that it covers essentially the same region of the roasting/grilling plate (7,17,27,37) as the induction coil (30, 50).
8. A roasting/grilling device according to one of the claims 6 or 7, characterised by two measurement coils forming a measurement coil unit (19a, 19b, 29), which measurement coils are

arranged next to one another in an opposing manner in the induction field of the induction coils (30, 50).

9. A roasting/grilling device according to one of the claims 6 to 7, characterised by a compensation circuit, which compensates disturbing influences of changes of the electrical resistance of the induction coil (30, 50) and of the at least one measurement coil occurring with changes of temperature, on the measurement result of the measurement coil or measurement coil unit (19a, 19b, 29).

10. A roasting/grilling device according to one of the claims 2 to 9, characterised in that the induction coil (30, 50) is also a measurement coil, and that a temperature measurement takes place when the induction power is switched off.

11. A roasting/grilling device according to one of the preceding claims, characterised by a regulation and control unit which measures the temperature of the roasting/grilling plate (7, 17, 27, 37) in time intervals which are larger, the smaller is a temperature difference between two successive temperature measurements.

12. A roasting/grilling device according to claim 11, characterised in that exactly one regulation and control unit is allocated to each induction coil (30, 50).

13. A roasting/grilling device according to one of the preceding claims, characterised by a calibration device with which measurement levels of various temperatures of the roasting/grilling plate (7, 17, 27, 37) may be determined and stored.

14. A roasting/grilling device according to one of the preceding claims, characterised in that the roasting/grilling plate comprises several regions (18a, 18b) which may be individually heated and whose temperature may be determined and set in an individual manner.

15. A roasting/grilling device according to claim 14, characterised in that in the roasting/grilling plate (7,17,27,37) there are provided means which prevent a temperature transfer between the individual regions (18a, 18b).

16. A roasting/grilling device according to claim 15, characterised in that the roasting/grilling plate (7,17,27,37) is a multi-layer plate which contains a layer of aluminium between two layers of stainless steel and that a wedge is incorporated in the aluminium layer.

17. A roasting/grilling device according to one of the preceding claims, characterised by a heat-resistant and corrosion-resistant roasting/grilling plate surface which in the heated condition

and with roasting/grilling plate temperatures in the application range has low radiation temperatures in a manner such that with a roasting/grilling plate temperature of 200°C, temperatures of smaller than 70°C are measured close to the roasting/grilling surface.

18. A roasting/grilling device according to claim 17, characterised in that the roasting/grilling plate in the region of the roasting/grilling plate surface comprises at least two successive thin layers, wherein the at least two thin layers in total contain 10-15% phosphor.

19. A roasting/grilling device according to claim 18, characterised in that the at least two thin layers have a phosphor constituent of 12-15% and a chromium constituent of 15-30%.